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Docket No.: 13156-00054-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Neven Lang et al.

Application Serial No.: 10/583,696

Confirmation No.: 7126

Filed: June 20, 2006

Art Unit: 1621

For: METHOD FOR SEPARATING TRIOXANE
FROM A MIXTURE CONTAINING
TRIOXANE, FORMALDEHYDE AND
WATER.

Examiner: Not Yet Assigned

NOTICE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with applicants' duty to disclose attached is a copy of the International Preliminary Report on Patentability of the PCT counterpart for the above case. It is noted that the document cited has already been made of record in an Information Disclosure Statement in this application.

Respectfully submitted,

By 

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TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B03/0349PC	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/014531	International filing date (day/month/year) 21.12.2004	Priority date (day/month/year) 23.12.2003
International Patent Classification (IPC) or national classification and IPC . B01 D3/36 C07D323/06		
Applicant BASF AKTIENGESELLSCHAFT		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/014531

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rule 12.3 and 23.1(b))
 - ☐ publication of the international application (Rule 12.4)
 - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages 1-9 _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - nos. 1-13 _____ as originally filed/furnished
 - nos.* _____ as amended (together with any statement) under Article 19
 - nos.* _____ received by this Authority on _____
 - nos.* _____ received by this Authority on _____
 - ☒ the drawings:
 - sheets 1/1 _____ as originally filed/furnished
 - sheets* _____ received by this Authority on _____
 - sheets* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/014531

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-12	YES
	Claims	13	NO
Inventive step (IS)	Claims		YES
	Claims	1-13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

D1: DE-A-195 26 307

1. The indications of pressure in claim 2 (upper limit), as well as the indication in claim 6 of the possible composition of stream I (with 80% formaldehyde, the sum adds to more than 100%), do not appear to be correct (PCT Article 6).
2. Document D1 discloses a process for separating trioxane from a mixture (1) (reference sign in D1) of formaldehyde, trioxane and water, in which method
 - the mixture (1) is distilled in a first distillation stage (2) under a pressure of 0.5 bar, for example, producing a stream (4) which contains formaldehyde, and a stream (3) which mainly contains trioxane, besides water and formaldehyde,
 - stream (3) is distilled in a second distillation stage under a pressure of 6 bars, for example, producing a stream (7) which contains approximately 100% trioxane, and a stream (6) which mainly contains trioxane, besides water

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

and formaldehyde.

The subject matter of claim 1 differs from the above in that stream (6) (stream V in claim 1) is distilled in a third distillation stage at 0.1-4 bars, and the resultant head product (stream VII in claim 1) is returned to the second distillation stage, together with stream (3) (stream III in claim 1).

By contrast, stream (6) is supplied in D1 to the first distillation stage. However, since stream (6), compared with mixture (1) (20%), already contains a high proportion of trioxane (60%), it is clear that it is more advantageous, from the point of view of energy consumption, not to "recontaminate" stream (6), but rather to further process it, accepting instead a higher equipment outlay. If the need for a higher equipment outlay is accepted, the claimed process represents only one of several obvious possibilities for utilising the high trioxane content of stream (6).

The process as per claim 1 is therefore regarded as a non-inventive optimisation of the known process, especially since for the time being it cannot be determined to have a surprising effect.

Claim 1 thus meets the requirements of PCT Article 33(3).

3. The use of trioxane as per claim 13 is not novel

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>(cf. D1, claim 9). Claim 13 thus does not meet the requirements of PCT Article 33(2).</p> <p>4. The features of the dependent claims are either known from D1 or result in an obvious manner from the circumstances.</p> <p>5. Contrary to PCT Rule 5.1(a)(ii), the description does not cite document D1 or indicate the relevant prior art disclosed therein.</p>